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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,515	09/23/2005	Wilmert De Bosscher	016782-0334	4514
23428 7590 07/02/2009 FOLEY AND LARDNER LLP SUITE 500 3000 K STREET NW WASHINGTON, DC 20007				
EXAMINER				
BAND, MICHAEL A				
ART UNIT		PAPER NUMBER		
1795				
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07/02/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/550,515

**Applicant(s)**

DE BOSSCHER, WILMERT

**Examiner**

MICHAEL BAND

**Art Unit**

1795

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 April 2009.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.  
4a) Of the above claim(s) 1 and 4-15 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 2 and 16-19 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2 and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morgan et al (US Patent No. 5,591,314) in view of Lynn et al (US Patent No. 6,375,815).

With respect to claims 2 and 16-19, Morgan et al discloses an apparatus to releasably affix a rotating cylindrical magnetron target [10] to a spindle [20] with a flange [22] utilizing a threaded spindle collar engaging threads (i.e. spiral groove) [80] on the outside surface of the target (abstract; fig. 1). Fig. 1 depicts a spring (resilient member) [70] engages the spiral (i.e. helical) groove [80] at an end of the target [10] and a clamp ring (i.e. seal) [40] engages an o-ring groove [50] in the flange [22] of the spindle [20], where an interface ring (i.e. spindle ring) [30] engages the a mating surface [12] of said target [10] (col. 5, lines 27-64). The diameters of the interface ring and target grooves are approximately equal since they interlock with each other. However Morgan et al is limited in that the target has a grooved outside instead of a grooved inside.

Lynn et al teaches a cylindrical target [200] attached to a rotatable support spindle [100] with a flange [102] (abstract; fig. 8). Fig. 8 depicts a retainer (i.e. interface)

ring [206] with grooves [208] on the outside and the target [200] has grooves on the inside that mate with each other (col. 2, lines 29-50). Lynn et al cites the advantages as reliability of the target, decrease in the time required to change out the target, decrease coolant leaks, improve structural integrity of the target, and provide an even distribution of clamping pressure (col. 2, lines 18-28). Lynn et al also cites that this arrangement is an improvement over Morgan et al (US Patent No. 5,591,314) (col. 1, lines 58-67; col. 2, lines 1-6).

It would have been obvious to one of ordinary skill in the art to use a target with inside grooves and an interface ring with outside grooves taught by Lynn et al instead of a target with outside grooves and an interface with inside grooves since it is the substitution of functionally equivalent grooves for attaching the target to the interface groove in addition to providing the advantages of reliability of the target, decrease in the time required to change out the target, decrease coolant leaks, improve structural integrity of the target, and provide an even distribution of clamping pressure over Morgan et al.

### ***Response to Arguments***

#### **103 Rejections**

3. On p. 5-7, the Applicant argues that Morgan et al does not teach the claimed combination of the interface ring, the clamping ring, and the one or more sealing rings. The Applicant also argues that the o-ring [40] of Morgan et al cannot be the clamping ring because the o-ring [40] is not adapted to engage at its one side with said flange

portion and to engage radially at its other side with said interface ring to hold the cylindrical target to the spindle. The Applicant also argues that the spindle ring [30] of Morgan et al cannot be the interface ring because it does not have a circumferential outer surface adapted to engage with a inside grooved circumferential surface of the cylindrical target.

The Examiner respectfully disagrees. As stated above, the spindle ring [30] is the interface ring, where the o-ring [40] is the clamp ring in addition to acting as one seal ring. Regarding the clamping ring (i.e. o-ring [40]) not adapted to engage, Morgan et al depicts in fig. 1 said o-ring [40] has one side engaged to the flange [22] and the other side engaged to the spindle [30] when said spindle [30] is attached to the target [10], with said o-ring [40] functioning to hold said spindle [30] to said target [10] in order to maintain the seal. Regarding the interface ring not having the circumferential outer surface adapted to engage the inside grooved circumferential surface, Lynn et al, not Morgan et al, has been used to teach this limitation.

4. On p. 7-8, the Applicant argues that Lynn et al does not teach a cylindrical target having at its end a grooved inside circumferential surface.

The Examiner respectfully disagrees. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Therefore Morgan et al teaches inner grooves on the interface ring [30] and grooves on the cylindrical target [10], with Lynn et

al teaching how the groove locations can be reversed to improve the apparatus as stated above.

### ***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Band whose telephone number is (571) 272-9815. The examiner can normally be reached on Mon-Fri, 9am-5pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on (571) 272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

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published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. B./

Examiner, Art Unit 1795

/Alexa D. Neckel/

Supervisory Patent Examiner, Art Unit 1795